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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,680	07/09/2003	John Apostolopoulos	200209975-1	2579

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HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

HOFFMAN, BRANDON S

ART UNIT	PAPER NUMBER
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2136

MAIL DATE	DELIVERY MODE
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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/616,680	<b>Applicant(s)</b> APOSTOLOPOULOS ET AL.	
	<b>Examiner</b> Brandon S. Hoffman	<b>Art Unit</b> 2136	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-44 are pending in this office action.
2. Applicant's arguments, file April 30, 2007, have been considered and are persuasive. However, a new ground of rejection is made.

#### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 30-44 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 30 comprises two portions, a truncatable unit and a cryptographic checksum. Considering a data structure to be "a physical or logical relationship among data elements, designed to support specific data manipulation functions" (IEEE Standard Dictionary of Electrical and Electronic Terms 308, 5<sup>th</sup> edition, 1993), this is considered non-functional descriptive material that does not constitute a statutory process, machine, manufacture, or composition of matter. The claims are not rejected because of the medium on which the limitations are stored, i.e., a computer readable medium having data packets stored therein; rather, the claims are rejected because they merely claim elements stored on a medium, not transformation is taking place to the data stored.

***Claim Rejections***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

6. Claims 1-5, 7, 8, 11-14, 16, 17, 19-22, 30, 36, 37, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meehan et al. (U.S. Patent Pub. No. 2003/0103571) in view of Zhu et al. (U.S. Patent Pub. No. 2004/0196975).

Regarding claim 1, Meehan et al. teaches a method of ensuring integrity of data, comprising:

- Separating an amount of data into segments (fig. 1, ref. num 3 and 4); and
- Combining a segment and an associated cryptographic checksum into a data packet (fig. 1, ref. num 7).

Meehan et al. does not specifically teach a cryptographic checksum, but rather an error correcting code to check and correct for errors (paragraph 0042).

Zhu et al. teaches computing a cryptographic checksum for a said segment (paragraph 0043).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine computing a cryptographic checksum, as taught by Zhu et al., with the method of Meehan et al. It would have been obvious for such modifications because a cryptographic checksum of a segment of data provides validation of correct data.

Regarding claim 2, Meehan et al. as modified by Zhu et al. teaches wherein said data comprises media data (see paragraph 0039 of Meehan et al.).

Regarding claim 3, Meehan et al. as modified by Zhu et al. teaches wherein said data comprises secure scalably streamable data (see fig. 1, ref. num 3 and 4 of Meehan et al.).

Regarding claim 4, Meehan et al. as modified by Zhu et al. teaches wherein said data is transmittable in a network (see fig. 1, ref. num 7 of Meehan et al.).

Regarding claim 5, Meehan et al. as modified by Zhu et al. teaches wherein said data is stored in a storage medium (see paragraph 0004 of Meehan et al.).

Regarding claim 7, Meehan et al. as modified by Zhu et al. teaches further comprising forwarding said data packet (see fig. 1, ref. num 7 of Meehan et al.).

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Regarding claim 8, Meehan et al. as modified by Zhu et al. teaches wherein said data to be streamed comprises a plurality of said data packets (see fig. 1, ref. num 3 and 4 of Meehan et al.).

Regarding claim 11, Meehan et al. as modified by Zhu et al. teaches wherein said cryptographic checksum is computed for a truncatable unit in said segment (see paragraph 0003 of Meehan et al.).

Regarding claim 12, Meehan et al. as modified by Zhu et al. teaches wherein said segment comprises a plurality of said truncatable units (see paragraph 0004 of Meehan et al.).

Regarding claims 13 and 19, Meehan et al. as modified by Zhu et al. teaches wherein a cryptographic checksum is computed for each of said truncatable units in said segment (see paragraph 0042 of Meehan et al.).

Regarding claims 14 and 20, Meehan et al. as modified by Zhu et al. teaches wherein a first cryptographic checksum is calculated for a first truncatable unit, and wherein a second cryptographic checksum is calculated for the combination of a second truncatable unit, said first truncatable unit, and said first cryptographic checksum (see paragraph 0006-0010 of Meehan et al., suggests scalability is provided across multiple computing devices with varying processing abilities, thus allowing portions of the data to

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be “truncated” to provide lower quality to devices with lower processing power and providing more “truncated” portions for devices with higher processing power).

Regarding claim 16, Meehan et al. teaches a method for providing security to a scalably streamed media signal in a network, comprising:

- Separating said streaming media signal into a plurality of truncatable units (fig. 1, ref. num 3 and 4);
- Appending said associated cryptographic checksum onto each of said truncatable units (fig. 1, ref. num 5);
- Combining one or more of said truncatable units and associated cryptographic checksums into a transmittable data packet (fig. 1, ref. num 6); and
- Forwarding said data packet (fig. 1, ref. num 7).

Meehan et al. does not teach computing a cryptographic checksum for each of said truncatable unit, but rather computing an error correcting code (paragraph 0042).

Replace teaches computing a cryptographic checksum for each of said truncatable unit (paragraph 0043).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine computing a cryptographic checksum, as taught by Zhu et al., with the method of Meehan et al. It would have been obvious for such

modifications because a cryptographic checksum of a segment of data provides validation of correct data.

Regarding claim 21, Meehan et al. as modified by Zhu et al. teaches wherein the size of said truncatable units is selected to ensure the size of said data packet is transmittable in said network (see page 4, table 1 of Meehan et al.).

Regarding claim 22, Meehan et al. as modified by Zhu et al. teaches wherein said associated cryptographic checksum is computed independently for its associated truncatable unit (see paragraph 0036 of Zhu et al.).

Regarding claim 30, Meehan et al. teaches a computer readable medium having a data packet stored therein for causing a functional change in the operation of a device, said data packet comprising:

- A plurality of truncatable units, each of said units comprising an amount of media data (fig. 1, ref. num 3 and 4).

Meehan et al. does not teach a cryptographic checksum computed for each of said truncatable units, but rather an error correcting code (fig. 1, ref. num 5 and paragraph 0042).



Zhu et al. teaches a cryptographic checksum computed for each of said truncatable units (paragraph 0043).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine computing a cryptographic checksum, as taught by Zhu et al., with the computer readable medium of Meehan et al. It would have been obvious for such modifications because a cryptographic checksum of a segment of data provides validation of correct data.

Regarding claim 36, Meehan et al. as modified by Zhu et al. teaches wherein said cryptographic checksum is computed based on one truncatable unit (see paragraph 0042 of Meehan et al.).

Regarding claim 37, Meehan et al. as modified by Zhu et al. teaches wherein said cryptographic checksum is computed based on a plurality of truncatable units and associated checksums (see paragraph 0042 of Meehan et al.).

Regarding claim 44, Meehan et al. as modified by Zhu et al. teaches wherein each of said truncatable units is enabled to be deleted from said transmittable packet independently of other truncatable units in said packet (see paragraph 0006-0010 of Meehan et al., suggests scalability is provided across multiple computing devices with varying processing abilities, thus allowing portions of the data to be “truncated” to

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provide lower quality to devices with lower processing power and providing more “truncated” portions for devices with higher processing power).

Claims 6, 9, 10, 15, 17, 18, 23-29, 31-35, and 38-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meehan et al. (U.S. Patent Pub. No. 2003/0103571) in view of Zhu et al. (U.S. Patent Pub. No. 2004/0196975), and further in view of Chang et al. (U.S. Patent No. 6,963,972).

Regarding claims 6 and 17, Meehan et al. as modified by Zhu et al. teaches all the limitations of claim 1, above. However, Meehan et al. as modified by Zhu et al. does not teach further comprising applying a transcoder-readable header to said data packet.

Chang et al. teaches further comprising applying a transcoder-readable header to said data packet (col. 10, lines 54-62).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine further comprising applying a transcoder-readable header to said data packet, as taught by Chang et al., with the method of Meehan et al./Zhu et al. It would have been obvious for such modifications because the transcoder readable header enables transcoding, which allows changes in quality without having to decrypt the data.

Regarding claims 9 and 23, Meehan et al. as modified by Zhu et al. teaches all the limitations of claim 1, above. However, Meehan et al. as modified by Zhu et al. does not teach further comprising encrypting said segment and said cryptographic checksum.

Chang et al. teaches further comprising encrypting said segment and said cryptographic checksum (col. 4, lines 5-9).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine encrypting the data, as taught by Chang et al., with the method of Meehan et al./Zhu et al. It would have been obvious for such modifications because encryption secures sensitive data from unauthorized viewers.

Regarding claims 10, 18, and 27, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said packet is enabled to be decrypted independently of other packets comprising said streamed media data (see fig. 12 of Chang et al.).

Regarding claims 15, 24, and 38, Meehan et al. as modified by Zhu et al. teaches all the limitations of claim 1, above. However, Meehan et al. as modified by Zhu et al. does not teach wherein said cryptographic checksum is computed using a hash function.

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Chang et al. teaches wherein said cryptographic checksum is computed using a hash function (col. 12, lines 19-35).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine using a hash, as taught by Chang et al., with the method of Meehan et al./Zhu et al. It would have been obvious for such modifications because hashes provide tamper protection (see col. 12, lines 19-25 of Chang et al.).

Regarding claim 25, Meehan et al. as modified by Zhu et al. teaches further comprising accessing said data packet (see fig. 1, ref. num 2 of Meehan et al.) and forwarding said data packet (see fig. 1, ref. num 7 of Meehan et al.).

Meehan et al./Zhu et al. does not teach reading a transcoder-readable header of said data packet and deleting one or more of said truncatable units.

Chang et al. teaches reading a transcoder-readable header of said data packet (col. 10, lines 54-62) and deleting one or more of said truncatable units (col. 13, lines 28-43); and

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine deleting one or more of said truncatable units, as taught by Chang et al., with the method of Meehan et al./Zhu et al. It would have been

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obvious for such modifications because the transcoder readable header enables transcoding, which allows changes in quality without having to decrypt the data.

Deleting units allows lower quality data to be transmitted to low-end devices.

Regarding claim 26, Meehan et al. as modified by Zhu et al./Chang et al. teaches further comprising:

- Writing a new transcoder-readable header for said data packet reflecting said deleting and applying said new transcoder-readable header to said data packet (see col. 13, lines 36-43 of Chang et al.).

Regarding claim 28, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said deleting comprises transcoding said data packet (see col. 13, lines 28-43 of Chang et al.).

Regarding claim 29, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said transcoder-readable header comprises information related to the content of said data packet while leaving said truncatable units undecrypted (see col. 13, lines 28-43 of Chang et al.).

Regarding claim 31, Meehan et al. as modified by Zhu et al. teaches all the limitations of claim 30, above. However, Meehan et al. as modified by Zhu et al. does not teach wherein said data packet further comprises a transcoder readable header

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comprising information related to said truncatable units and said cryptographic checksums.

Chang et al. teaches wherein said data packet further comprises a transcoder readable header comprising information related to said truncatable units and said cryptographic checksums (col. 10, lines 54-62).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine wherein said data packet further comprises a transcoder readable header comprising information related to said truncatable units and said cryptographic checksums, as taught by Chang et al., with the medium of Meehan et al./Zhu et al. It would have been obvious for such modifications because the transcoder readable header enables transcoding, which allows changes in quality without having to decrypt the data.

Regarding claim 32, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said transcoder readable header enables transcoding said data packet (see col. 13, lines 28-43 of Chang et al.).

Regarding claim 33, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said truncatable units and said cryptographic checksums are enabled to be

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encrypted independently of said transcoder readable header (see fig. 12 of Chang et al.).

Regarding claim 34, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said truncatable units and said cryptographic checksums are enabled to be decrypted independently of said transcoder readable header (see fig. 12 of Chang et al.).

Regarding claim 35, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said transcoder readable header is enabled to be read independently of said truncatable units and said cryptographic checksums (see fig. 12 of Chang et al.).

Regarding claim 43, Meehan et al. as modified by Zhu et al./Chang et al. teaches wherein said transcoder readable header is enabled to be written independently of said truncatable units and said cryptographic checksums (see fig. 12 of Chang et al.).

Regarding claims 39-42, Meehan et al. as modified by Zhu et al. teaches all the limitations of claim 30, above. However, Meehan et al. as modified by Zhu et al. does not teach wherein said cryptographic checksum is calculated using a message digest, message authentication code, keyed-hashing-for-message-authentication, and a digital signature function.

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Chang et al. does not teach wherein said cryptographic checksum is calculated using a message digest, message authentication code, keyed-hashing-for-message-authentication, and a digital signature function (col. 9, lines 32-37).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine calculating the checksum using a variety of different functions, as taught by Chang et al., with the medium of Meehan et al./Zhu et al. It would have been obvious for such modifications because hashes provide tamper protection (see col. 12, lines 19-25 of Chang et al.).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon S. Hoffman whose telephone number is 571-272-3863. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser G. Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brandon Hoffman/

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NASSER MOAZZAMI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100



7,20,07